



**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**[RTID 0648-XC362]**

**Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to In-Water Construction at Two Ferry Facilities on Bainbridge Island, Washington**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice; issuance of an incidental harassment authorization (IHA).

**SUMMARY:** In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an IHA to the Washington State Department of Transportation (WSDOT) Ferries Division to incidentally harass marine mammals during two in-water construction projects on Bainbridge Island, Washington: the Bainbridge Island Ferry Terminal Overhead Loading Replacement Project and Eagle Harbor Maintenance Facility Slip F Improvement Project.

**DATES:** This authorization is effective from September 16, 2022 through September 15, 2023.

**FOR FURTHER INFORMATION CONTACT:** Amy Fowler, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>. In case of problems accessing these documents, please call the contact listed above.

**SUPPLEMENTARY INFORMATION:**

## **Background**

The MMPA prohibits the “take” of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed IHA is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other “means of effecting the least practicable adverse impact” on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as “mitigation”); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

## **Summary of Request**

On February 15, 2022, NMFS received a request from WSDOT for an IHA to take marine mammals incidental to the Bainbridge Island Ferry Terminal Overhead Loading Replacement Project (the Bainbridge Project) and Eagle Harbor Maintenance Facility Slip F Improvement Projects (the Eagle Harbor Project) in Bainbridge Island, Washington. The application was deemed adequate and complete on July 25, 2022. WSDOT’s request is for take of 12 species of marine mammal by Level B harassment

and, for a subset of these species (harbor seal (*Phoca vitulina*), harbor porpoise (*Phocoena phocoena*), and Dall's porpoise (*Phocoenoides dalli*)), Level A harassment. Neither WSDOT nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

## **Description of Proposed Activity**

### *Overview*

The WSDOT Ferries Division (WSF) operates and maintains 19 ferry terminals and 1 maintenance facility, all of which are located in either Puget Sound or the San Juan Islands. Two projects are planned to be conducted: replacement of the Bainbridge Island Ferry Terminal overhead loading structure and improvement of the Eagle Harbor Maintenance Facility Slip F. Both of the projects are located within Eagle Harbor on Bainbridge Island, Washington, would be completed within the same in-water work season, would have overlapping ensonified areas, and use the same information to estimate marine mammal takes. Therefore, WSDOT submitted one application for a single IHA to cover both projects.

The purpose of the Bainbridge Project is to replace the seismically vulnerable timber trestle and fixed steel portions of the overhead loading structure at the Bainbridge Island Ferry Terminal. The purpose of the Eagle Harbor Project is to improve the maintenance efficiency of the facility. The facility has six vessel slips whose purpose is to maintain the WSF system's vessels.

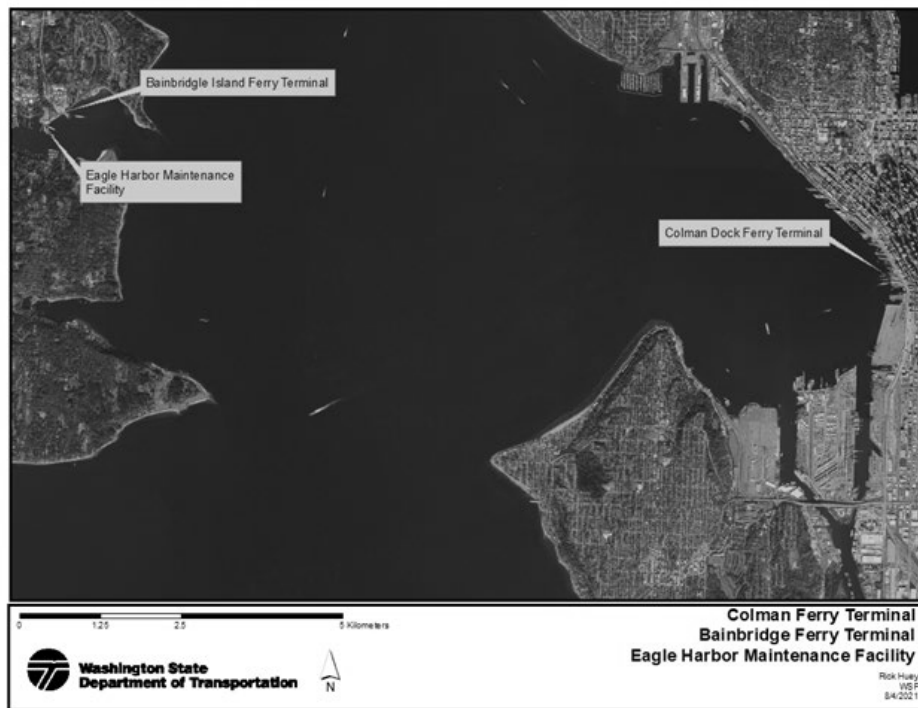
### *Dates and Duration*

Due to in-water work timing restrictions established by NMFS and the U.S. Army Corps of Engineers, construction in the projects area is limited each year from August 1 through February 15. Both the Bainbridge Project and the Eagle Harbor Project would be constructed during the 2022 to 2023 in-water work season. For the Bainbridge Project,

in-water construction is expected to occur on up to 57 days (Table 1). For the Eagle Harbor Project, in-water construction is expected to occur on up to 31 days (Table 2).

### *Specific Geographic Region*

Both projects are located within Eagle Harbor on Bainbridge Island, Washington, approximately 9 miles (mi; 14.5 kilometers (km)) west of Seattle, Washington. The Eagle Harbor Maintenance Facility is approximately 0.25 mi (0.4 km) southwest of the Bainbridge Island Ferry Terminal. Eagle Harbor contains a mix of commercial docks, public marinas, private docks, and undeveloped waterfront properties. The harbor extends 2 mi (1.2 km) west from the mouth of the harbor, which is approximately 900 feet (ft; 274.3 meters (m)) wide and is bounded by Wing Point to the north and Bill Point to the south. A large underwater sand bar extends to the southeast from Wing Point. Water depths within Eagle Harbor are up to 50 ft (15.2 m) but outside the harbor, water depths between Bainbridge Island and Seattle can be over 700 ft (213.4 m).



**Figure 1 -- Location of Bainbridge Island Ferry Terminal and Eagle Harbor Maintenance Facility in Puget Sound**

### *Detailed Description of Specific Activity*

## Bainbridge Project

The proposed project elements for the Bainbridge Project include:

1. Using vibratory and impact hammers to install 31 24-inch (in) steel pipe piles for 2 temporary work platforms to support construction equipment;
2. Using vibratory and impact hammers to install four 24-in steel pipe piles for a temporary walkway to maintain overhead loading operations while the new walkway is constructed;
3. Using vibratory and impact hammers to install 14 30-in and 12 36-in steel pipe piles to support the new permanent walkway;
4. Using a vibratory hammer to remove 76 creosote-treated 12-in timber piles and using a saw to cut one 4.5 ft (1.4 m) diameter concrete drill shaft at the mudline that supported the existing overhead loading walkway; and
5. Using a vibratory hammer to remove all steel pipe piles installed for the temporary walkway and work platforms.

**Table 1 -- Proposed Pile Driving for the Bainbridge Project**

Project Element	Pile Size and Type	Install or Remove	Method	Number of Piles	Duration per Pile (minutes)	Piles per day	Duration (days)
Temporary work platform and temporary walkway	24-in Steel	Install	Vibratory	39	30	4	10
			Impact	39	30	4	10
		Remove	Vibratory	39	30	4	10
New Overhead Loading Structure	24-in Steel	Install	Vibratory	6	30	2	3
			Impact	6	30	2	3
	30-in Steel	Install	Vibratory	4	30	2	2
			Impact	4	30	2	2
	36-in Steel	Install	Vibratory	12	30	2	6
			Impact	12	30	2	6
Old Overhead Loading Structure Removal	12-in Timber	Remove	Vibratory	76	15	15	5
Total Temporary Piles Installed and Removed				39			
Total Permanent Piles Installed				26			
Total Timber Piles Removed				76			

Total Duration (days)	57
-----------------------	----

## Eagle Harbor Project

The proposed project elements for the Eagle Harbor Project include:

1. Using vibratory and impact hammers to install nine 24-in steel pipe piles and two 3-in steel pipe piles to support a new trestle and vehicle transfer span;
2. Using a vibratory hammer to install eight 36-in steel reaction piles and four 36-in steel fender piles for two new steel wingwalls;
3. Using a vibratory hammer to install eight 30-in steel reaction piles and two 36-in fender piles for two new fixed dolphins; and
4. Using a vibratory hammer to remove 186 12-in timber piles and 4 18-in steel pipe piles that supported existing walkways, timber pile dolphins, and a U-float.

**Table 2 -- Proposed Pile Driving for the Eagle Harbor Project**

Project Element	Pile Size and Type	Install or Remove	Method	Number of Piles	Duration per Pile (minutes)	Duration (hours)	Rate per day	Duration (days)
Timber Walkway Pile Removal	12-in Timber	Remove	Vibratory	52	15	13	15	4
Timber Dolphin Removal	12-in Timber	Remove	Vibratory	134	15	33.5	15	9
Temporary Relocated Float	18-in Steel	Install	Vibratory	4	30	4	4	1
		Remove		4	30	3	4	1
U-Float Removal	18-in Steel	Remove	Vibratory	4	30	4	4	1
Trestle and Transfer Span	24-in Steel	Install	Vibratory	9	30	4.5	4	3
			Impact	9	30	4.5	3	3
	36-in Steel	Install	Vibratory	2	30	1	4	1
			Impact	2	30	1	3	1
Wingwall	30-in Steel	Install	Vibratory	8	30	4	4	2

	36-in Steel	Install	Vibratory	4	30	2	4	1
Intermediate Dolphin	30-in Steel	Install	Vibratory	4	30	2	4	1
	36-in Steel	Install	Vibratory	1	30	5	4	1
Outer Dolphin	30-in Steel	Install	Vibratory	4	30	2	4	1
	36-in Steel	Install	Vibratory	2	30	1	4	1
Total Piles Removed				194				
Total Piles Installed				38				
Total Duration (days)								31

A detailed description of the planned construction project was provided in the **Federal Register** notice for the proposed IHA (87 FR 48623; August 10, 2022). Since that time, no changes have been made to the planned construction activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation** and **Monitoring and Reporting**).

### **Comments and Responses**

A notice of NMFS' proposal to issue an IHA to WSDOT was published in the **Federal Register** on August 10, 2022 (87 FR 48623). That notice described, in detail, WSDOT's activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. In that notice, we requested public input on the request for authorization described therein, our analyses, the proposed authorization, and any other aspect of the notice of proposed IHA, and requested that interested persons submit relevant information, suggestions, and comments. This proposed notice was available for a 30-day public comment period.

During the public comment period, the United States Geological Survey provided a letter stating that it had no comment. No other comments were received.

## **Changes from the Proposed IHA to Final IHA**

No changes have been made to the authorization itself, but NMFS has added a clarification in Table 6 of this notice to note that the source levels listed for impact pile driving are attenuated measurements, and has corrected the reference for the source levels for impact pile driving. See Table 6.

## **Description of Marine Mammals in the Area of Specified Activities**

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, incorporated here by reference, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; [www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments)) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website (<https://www.fisheries.noaa.gov/find-species>).

Table 3 lists all species or stocks for which take is expected and proposed to be authorized for this activity, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is expected to occur, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.



Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Pacific and Alaska SARs. All values presented in Table 3 are the most recent available at the time of publication and are available in the 2021 SARs (Carretta *et al.*, 2022; Muto *et al.*, 2022).

**Table 3 -- Species Likely Impacted by the Specified Activities**

Common name	Scientific name	Stock	ESA/MMP A status; Strategic (Y/N) <sup>1</sup>	Stock abundance (CV, N <sub>min</sub> , most recent abundance survey) <sup>2</sup>	PBR	Annual M/SI <sup>3</sup>
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray whale	<i>Eschrichtius robustus</i>	Eastern N Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	131
Family Balaenopteridae (rorquals)						
Minke whale	<i>Balaenoptera acutorostrata</i>	California/Oregon/Washington	-, -, N	915 (0.792, 509, 2018)	4.1	≥ 0.59
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Long-Beaked Common Dolphin	<i>Delphinus capensis</i>	California	-, -, N	83,379 (0.216, 69,636, 2018)	668	≥29.7
Bottlenose Dolphin	<i>Tursiops truncatus</i>	California Coastal	-, -, N	453 (0.06, 346, 2011)	2.7	≥2.0
Pacific White-Sided Dolphin	<i>Lagenorhynchus obliquidens</i>	California/Oregon/Washington	-, -, N	34,999 (0.222, 29,090, 2018)	279	7
Killer Whale	<i>Orcinus orca</i>	West Coast Transient	-, -, N	349 <sup>4</sup> (N/A, 349, 2018)	3.5	0.4
Family Phocoenidae (porpoises)						
Harbor Porpoise	<i>Phocoena phocoena</i>	Washington Inland Waters	-, -, N	11,233 (0.37, 8,308, 2015)	66	≥7.2
Dall's Porpoise	<i>Phocoenoides dalli</i>	California/Oregon/Washington	-, -, N	16,498 (0.61, 10,286, 2019)	99	≥0.66

Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California Sea Lion	<i>Zalophus californianus</i>	U.S.	-, -, N	257,606 (N/A, 233,515, 2014)	14,011	>320
Steller Sea Lion	<i>Eumetopias jubatus</i>	Eastern	-, -, N	43,201 <sup>5</sup> (see SAR, 43,201, 2017)	2,592	112
Family Phocidae (earless seals)						
Harbor Seal	<i>Phoca vitulina</i>	Washington Northern Inland Waters	-, -, N	11,036 <sup>6</sup> (UNK, UNK, 1999)	UND	9.8
Northern Elephant Seal	<i>Mirounga angustirostris</i>	California Breeding	-, -, N	187,386 (N/A, 85,369, 2013)	5,122	13.7

<sup>1</sup> ESA status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

<sup>2</sup> NMFS marine mammal stock assessment reports online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

<sup>3</sup> These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (e.g., commercial fisheries, ship strike). Annual mortality/serious injury (M/SI) often cannot be determined precisely and is in some cases presented as a minimum value or range.

<sup>4</sup> Based on counts of individual animals identified from photo-identification catalogues. Surveys for abundance estimates of these stocks are conducted infrequently.

<sup>5</sup> Best estimate of pup and non-pup counts, which have not been corrected to account for animals at sea during abundance surveys.

<sup>6</sup> The abundance estimate for this stock is greater than eight years old and is therefore not considered current. PBR is considered undetermined for this stock, as there is no current minimum abundance estimate for use in calculation. We nevertheless present the most recent abundance estimates, as these represent the best available information for use in this document.

As indicated above, all 12 species (with 12 managed stocks) in Table 3 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. While humpback whales (*Megaptera novaeangliae*) and killer whales from the Southern Resident stock are known to occur in Puget Sound, in consideration of the proposed requirements described in the **Mitigation and Monitoring and Reporting** sections of this notice, WSDOT has determined that take of these species is unlikely to occur and has therefore not requested take of humpback whales or Southern Resident killer whales. NMFS has concurred with this determination and no take of these species is anticipated or authorized.

A detailed description of the species likely to be affected by WSDOT's projects, including brief introductions to species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (87 FR 48623; August 10, 2022); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions.

### *Marine Mammal Hearing*

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 4.

**Table 4 -- Marine Mammal Hearing Groups (NMFS, 2018)**

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, <i>Kogia</i> , river dolphins, Cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i> )	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz
* Represents the generalized hearing range for the entire group as a composite ( <i>i.e.</i> , all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall <i>et al.</i> , 2007) and PW pinniped (approximation).	

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.*, 2006; Kastelein *et al.*, 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information.

### **Potential Effects of Specified Activities on Marine Mammals and their Habitat**

The effects of underwater noise from WSDOT's construction activities have the potential to result in harassment of marine mammals in the vicinity of the project areas. The **Federal Register** notice of proposed IHA (87 FR 48623; August 10, 2022) included a discussion of the effects of underwater noise from WSDOT's activities on marine mammals and their habitat. That information and analysis is incorporated by reference into the final IHA determination and is not repeated here; please refer to the notice of proposed authorization (87 FR 48623; August 10, 2022).

### **Estimated Take**

This section provides an estimate of the number of incidental takes authorized through the IHA, which will inform both NMFS' consideration of "small numbers," and the negligible impact determinations.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes will primarily be by Level B harassment (in the form of behavioral disturbance and temporary threshold shift (TTS)), as use of the acoustic sources (*i.e.*, vibratory or impact pile driving and removal) have the potential to result in disruption of behavioral patterns and cause a temporary loss in hearing sensitivity for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result for porpoises and harbor seals because predicted auditory injury zones are larger. The mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how the authorized take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can

contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the authorized take numbers.

### *Acoustic Thresholds*

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur permanent threshold shift (PTS) of some degree (equated to Level A harassment). Thresholds have also been developed to identify the pressure levels above which animals may incur different types of tissue damage (non-acoustic Level A harassment or mortality) from exposure to pressure waves from explosive detonation. Thresholds have also been developed identifying the received level of in-air sound above which exposed pinnipeds would likely be behaviorally harassed.

*Level B Harassment* – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.*, 2007, 2021; Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when

exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1  $\mu$ Pa)) for continuous (e.g., vibratory pile-driving, drilling) and above RMS SPL 160 dB re 1  $\mu$ Pa for non-explosive impulsive (e.g., seismic airguns) or intermittent (e.g., scientific sonar) sources.

WSDOT's planned activities include the use of continuous (vibratory hammer) and impulsive (impact hammer) sources, and therefore the 120 and 160 dB re 1  $\mu$ Pa (rms) thresholds are applicable.

*Level A harassment* – NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). WSDOT's activities include the use of impulsive (impact hammer) and non-impulsive (vibratory hammer) sources.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018 Technical Guidance, which may be accessed at:

[www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance).

**Table 5 -- Thresholds Identifying the Onset of Permanent Threshold Shift**

	<b>PTS Onset Acoustic Thresholds*</b> (Received Level)	
<b>Hearing Group</b>	<b>Impulsive</b>	<b>Non-impulsive</b>
<b>Low-Frequency (LF) Cetaceans</b>	<i>Cell 1</i> $L_{pk,flat}$ : 219 dB $L_{E,LF,24h}$ : 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$ : 199 dB
<b>Mid-Frequency (MF) Cetaceans</b>	<i>Cell 3</i> $L_{pk,flat}$ : 230 dB $L_{E,MF,24h}$ : 185 dB	<i>Cell 4</i> $L_{E,MF,24h}$ : 198 dB

<b>High-Frequency (HF) Cetaceans</b>	<i>Cell 5</i> $L_{pk,flat}$ : 202 dB $L_{E,HF,24h}$ : 155 dB	<i>Cell 6</i> $L_{E,HF,24h}$ : 173 dB
<b>Phocid Pinnipeds (PW) (Underwater)</b>	<i>Cell 7</i> $L_{pk,flat}$ : 218 dB $L_{E,PW,24h}$ : 185 dB	<i>Cell 8</i> $L_{E,PW,24h}$ : 201 dB
<b>Otariid Pinnipeds (OW) (Underwater)</b>	<i>Cell 9</i> $L_{pk,flat}$ : 232 dB $L_{E,OW,24h}$ : 203 dB	<i>Cell 10</i> $L_{E,OW,24h}$ : 219 dB
<p>* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.</p> <p><u>Note:</u> Peak sound pressure (<math>L_{pk}</math>) has a reference value of 1 <math>\mu</math>Pa, and cumulative sound exposure level (<math>L_E</math>) has a reference value of 1 <math>\mu</math>Pa<sup>2</sup>s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI, 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript “flat” is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (<i>i.e.</i>, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.</p>		

### *Ensonified Area*

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss coefficient.

The sound field in the project areas is the existing background noise plus additional construction noise from the proposed project. Marine mammals are expected to be affected by sound generated by the primary components of the project (*i.e.*, impact and vibratory pile driving).

In order to calculate distances to the Level A harassment and Level B harassment thresholds for the methods and piles being used in these projects, NMFS used acoustic monitoring data from previous pile driving at the Bainbridge Island Ferry Terminal (impact installation of 24-in steel piles) and Eagle Harbor Maintenance Facility (impact installation of 30-in steel piles), as well as pile driving at other locations within Puget Sound to develop source levels for the various pile types, sizes, and methods for the two



projects (Table 6). A source level for vibratory driving of 18-in steel piles is not available so it is conservatively assumed to be equivalent to the source level for 24-in steel piles.

**Table 6 -- Expected Project Sound Source Levels**

Pile Type and Size (in)	Method	Source Level (dB re 1 µPa)	Source Level Measurement Distance (m)	Reference
12-in timber	Vibratory removal	152 dB rms	10	Greenbusch Group (2018)
18-in and 24-in steel	Vibratory installation and removal	166 dB rms	10	WSDOT (2020) <sup>1</sup>
30-in steel	Vibratory installation and removal	176 dB rms	6	WSDOT (2020) <sup>1</sup>
36-in steel	Vibratory installation	184 dB rms	10	WSDOT (2020) <sup>1</sup>
24-in steel	Impact installation	206 dB peak 179 dB SEL 195 dB rms	10	WSDOT (2020) <sup>2</sup>
30-in steel	Impact installation	194 dB peak 182 dB SEL 184 dB rms	10	WSDOT (2020) <sup>2</sup>
36-in steel	Impact installation	205 dB peak 178 dB SEL 191 dB rms	10	WSDOT (2020) <sup>2</sup>

<sup>1</sup>WSDOT Biological Assessment Manual Table 7-15

<sup>2</sup> Bubble curtain-attenuated source levels from WSDOT Biological Assessment Manual Table 7-14

### *Level B Harassment Zones*

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is:

$$TL = B * \text{Log}_{10} (R1/R2), \text{ where}$$

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

R1 = the distance of the modeled SPL from the driven pile, and

R2 = the distance from the driven pile of the initial measurement

The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for WSDOT's planned activities in the absence of specific modelling. The Level B harassment zones for WSDOT's planned activities are shown in Table 7.

#### *Level A Harassment Zones*

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources such as pile installation and removal, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur PTS. The isopleths generated by the User Spreadsheet used the same TL coefficient as the Level B harassment zone calculations (*i.e.*, the practical spreading value of 15). Inputs used in the User Spreadsheet (*e.g.*, number of piles per day, duration and/or strikes per pile) are presented in Tables 1 and 2, and the resulting isopleths are reported below in Table 7.

#### **Table 7 -- Level A Harassment and Level B Harassment Zones**

Pile size/type	Pile driving method	Level A harassment zone (m)					Level B harassment zone (m)
		LF cetaceans	MF cetaceans	HF cetaceans	Phocids	Otariids	
12-in timber	Vibratory removal	4.1	0.4	6.1	2.5	0.2	1,360 <sup>a</sup>
18-in steel	Vibratory installation/removal	23.4	2.1	34.5	14.2	1.0	11,659 <sup>a</sup>
24-in steel	Vibratory installation/removal	27.1	2.4	40.1	16.5	1.2	11,659 <sup>a</sup>
30-in steel	Vibratory installation/removal	65.1	5.8	96.2	39.5	2.8	32,470 <sup>a,b</sup>
36-in steel	Vibratory installation	485.1	43.0	717.2	294.9	20.7	184,785 <sup>a,b</sup>
24-in steel	Impact installation	784.8	27.9	934.8	420.0	30.6	2,154 <sup>c</sup>
30-in steel	Impact installation	1359.6	48.4	1619.5	727.6	53.0	398 <sup>c</sup>
36-in steel	Impact installation	795.9	28.3	948.0	425.9	31.0	1,166 <sup>c</sup>

<sup>a</sup> Distance to 120 dB rms threshold.

<sup>b</sup> Distance to Level B harassment threshold without obstruction; however for these projects, 13,345 m is the maximum in-water distance until land is reached.

<sup>c</sup> Distance to 160 dB rms threshold.

### *Marine Mammal Occurrence and Take Calculation and Estimation*

In this section we provide information about the occurrence of marine mammals, including density or other relevant information, that will inform the quantitative estimate of the take that is reasonably likely to occur and proposed for authorization. Unless otherwise specified, the term “pile driving” in this section, and all following sections, may refer to either pile installation or removal. WSDOT first estimated take for both projects using the areas ensonified above the Level B harassment threshold and density estimates for marine mammals in Puget Sound. Density estimates for all species except harbor porpoises were from the U.S. Navy’s Marine Species Density Database (MSDD) for the Northwest Training and Testing (NWTT) Study Area (U.S. Navy, 2019). For harbor porpoises, WSDOT used the density estimate from Evenson (2016) as it was

considered more conservative than the density estimate for harbor porpoises from the NWTT MSDD. However, for all species except harbor seals and harbor porpoises, WSDOT did not consider the resulting take estimates to be realistic (*i.e.*, either over- or underestimated take). Instead, WSDOT compiled monitoring results from pile driving between August 2017 and February 2021 at the Seattle Ferry Terminal Multimodal Project at Colman Dock (WSDOT, 2021) (Table 8). Because the Level B harassment zones from vibratory pile driving at Colman Dock extended to or near the Bainbridge Island shoreline, and because the Level B harassment zones from vibratory pile driving at the Bainbridge Ferry Terminal and Eagle Harbor Maintenance Facility extend to the Seattle shoreline, WSDOT considered the monitoring results from the Seattle Multimodal Project to be the most relevant and comprehensive sightings data available for the project areas. Based on the Seattle Multimodal Project monitoring results, WSDOT used their best professional judgement to estimate the number of marine mammals that may be taken incidental to the planned activities.

NMFS has carefully reviewed WSDOT's analysis and concludes that it represents an appropriate and accurate method for estimating incidental take caused by WSDOT's activities.

**Table 8 -- Marine Mammal Density and Sightings**

Species	Density/ km <sup>2</sup>	Sightings Total	Average Sightings/Day (372 days)	Maximum One-day Sightings	Take Requested and Authorized
Harbor Seal	3.91	1,939	5.21	43	Yes
Northern Elephant Seal	0.0 <sup>1</sup>	1	0.003	1	Yes
California Sea Lion	0.0152- 0.0211	2,625	7.05	38	Yes
Steller Sea Lion	0.0010- 0.0478	100	0.27	10	Yes
Unidentified pinniped	N/A	118	N/A	9	N/A
Killer Whale Southern Resident	0.000009- 0.007828	297	0.80	26	No
Killer Whale Transient	0.001582- 0.002373	47	0.13	20	Yes
Gray Whale	0.000086	4	0.011	1	Yes
Minke Whale	0.00045	1	0.003	1	Yes

Species	Density/ km <sup>2</sup>	Sightings Total	Average Sightings/Day (372 days)	Maximum One-day Sightings	Take Requested and Authorized
Unidentified large whale	N/A	2	N/A	1	N/A
Unidentified small whale	N/A	10	N/A	9	N/A
Harbor Porpoise	0.58	413	1.11	40	Yes
Dall's Porpoise	0.00045	8	0.02	5	Yes
Pacific White-sided Dolphin	0.0	2	0.005	2	Yes
Long-beaked Common Dolphin	0.0	2	0.005	1	Yes
Common Bottlenose Dolphin	0.0	6	0.02	2	Yes
Unidentified dolphin/porpoise	N/A	42	N/A	5	N/A

### Gray Whale

WSDOT estimated that up to 20 Level B harassment takes of gray whales could result from each project, for a total of 40 gray whale takes by Level B harassment. In consideration of the infrequent occurrence of gray whales in the project areas, the mitigation and monitoring measures that WSDOT is required to comply with, including marine mammal monitoring and coordination with Orca Network that would alert WSDOT to the presence of large whales in the project area (see **Mitigation**), and given the size and visibility of gray whales, WSDOT will be able to detect gray whales and stop work before gray whales can enter the Level A harassment zones. Therefore, it is unlikely that any gray whales would be taken by Level A harassment. No take of gray whales by Level A harassment is requested or authorized.

### Minke Whale

WSDOT estimated that up to 20 Level B harassment takes of minke whales could result from each project, for a total of 40 minke whale takes by Level B harassment. Like gray whales, in consideration of the infrequent occurrence of minke whales in the project areas, the mitigation and monitoring measures that WSDOT is required to comply with, including marine mammal monitoring and coordination with Orca Network (see **Mitigation**), and given the size and visibility of minke whales, WSDOT will be able to

detect minke whales and stop work before minke whales can enter the Level A harassment zones. Therefore, it is unlikely that any minke whales would be taken by Level A harassment. No take of minke whales by Level A harassment is requested or authorized.

#### Long-Beaked Common Dolphin

WSDOT estimated that up to 20 Level B harassment takes of long-beaked common dolphins could result from each project, for a total of 40 long-beaked common dolphin takes by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of long-beaked common dolphins, WSDOT will be able to cease pile driving before long-beaked common dolphins can enter the Level A harassment zone. No take of long-beaked common dolphins by Level A harassment is requested or authorized.

#### Bottlenose Dolphin

WSDOT estimated that up to 20 Level B harassment takes of bottlenose dolphins could result from each project, for a total of 40 bottlenose dolphin takes by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of bottlenose dolphins, WSDOT will be able to cease pile driving before bottlenose dolphins can enter the Level A harassment zone. No take of bottlenose dolphins by Level A harassment is requested or authorized.

#### Pacific White-Sided Dolphin

WSDOT estimated that up to 20 Level B harassment takes of Pacific white-sided dolphins could result from each project, for a total of 40 Pacific white-sided dolphin takes by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of Pacific white-sided dolphins, WSDOT will be able to cease pile driving before Pacific white-sided dolphins can enter the Level A

harassment zone. No take of Pacific white-sided dolphins by Level A harassment is requested or authorized.

#### Killer Whale (Transient)

WSDOT estimated that up to 60 Level B harassment takes of transient killer whales could result from each project, for a total of 120 killer whale takes by Level B harassment. The Level A harassment zones for mid-frequency cetaceans are all less than 50 m. Given the visibility of killer whales, WSDOT will be able to cease pile driving before killer whales can enter the Level A harassment zone. No take of killer whales by Level A harassment is requested or authorized.

As stated above, no take of Southern Resident killer whales is expected or authorized.

#### Harbor Porpoise

To estimate the number of harbor porpoises that may be taken by Level B harassment from the two projects, WSDOT calculated the area ensonified above the Level B harassment threshold for each pile size, type, and method for both projects. WSDOT then multiplied the estimated density of harbor porpoises in the area (0.58 per km<sup>2</sup>; Evenson 2016) by the ensonified area and the expected days of work for each project element (Table 9).

**Table 9 -- Estimated Take of Harbor Porpoises by Level B Harassment**

Pile size, type, and method	Bainbridge ensonified area (km <sup>2</sup> )	Bainbridge days of work	Eagle Harbor ensonified area (km <sup>2</sup> )	Eagle Harbor days of work	Bainbridge takes by Level B Harassment by pile size, type, and method	Eagle Harbor takes by Level B Harassment by pile size, type, and method
12-in timber vibratory	0.5	5	0.8	13	3	6
18-in steel vibratory	N/A	0	23.2	3	0	27
24-in steel vibratory	2.3	2	23.2	3	3	40
30-in steel vibratory	2.3	23	23.2	4	320	53

36-in steel vibratory	2.3	6	23.2	4	84	53
24-in steel impact	0.9	13	0.87	3	17	2
30-in steel impact	0.4	2	N/A	0	3	0
36-in steel impact	0.9	6	0.87	1	8	1
Total					298	183

The areas ensonified above the Level A harassment threshold for high-frequency cetaceans has been omitted from the areas ensonified above the Level B harassment threshold presented in Table 9. For impact installation of 30-in steel piles, the Level A harassment zone for high-frequency cetaceans is approximately 1,620 m. To estimate the number of harbor porpoises that may be present within the Level A harassment zone, WSDOT used the average sightings rate from the Seattle Multimodal Project at Colman Dock (0.691 harbor porpoises per day; Table 8) multiplied by the days of impact pile driving expected for each project (27 days for the Bainbridge Project and 8 days for the Eagle Harbor Project) to estimate that 19 and 6 harbor porpoises may be taken by Level A harassment from the Bainbridge Project and Eagle Harbor Project, respectively. Therefore, WSDOT requested, and NMFS has authorized, a total of 25 takes of harbor porpoises by Level A harassment.

#### Dall's Porpoise

WSDOT estimated that up to 20 Level B harassment takes of Dall's porpoises could result from each project, for a total of 40 Dall's porpoise takes by Level B harassment.

For impact installation of 30-in steel piles, the Level A harassment zone for high-frequency cetaceans is approximately 1,620 m. Dall's porpoises are considered rare in the project area and are unlikely to be present within the Level A harassment zones but WSDOT conservatively estimates that no more than 5 Dall's porpoises could enter the Level A harassment zones of each project. Therefore, WSDOT requested, and NMFS has authorized, a total of 10 takes of Dall's porpoises by Level A harassment.



## California Sea Lion

Over the course of 372 days of monitoring for the Seattle Multimodal Project at Colman Dock, the average number of California sea lions observed per day was 7.05 (Table 8). WSDOT used that average sightings rate multiplied by the days of work for each project (57 days for the Bainbridge Project and 31 days for the Eagle Harbor Project) to estimate that 402 and 219 California sea lions may be taken by Level B harassment from the Bainbridge Project and Eagle Harbor Project, respectively, for a total of 621 takes of California sea lions by Level B harassment.

The largest Level A harassment zone for otariid pinnipeds is 53 m. WSDOT would be required to implement a 60 m shutdown zone for otariids for all pile driving activities. At that close range, WSDOT will be able to detect California sea lions and implement the required shutdown measures before California sea lions can enter the Level A harassment zone. Therefore, no takes of California sea lions by Level A harassment are requested or authorized.

## Steller Sea Lion

WSDOT estimated that 180 Level B harassment takes of Steller sea lions could result from each project, for a total of 360 Steller sea lion takes by Level B harassment. The largest Level A harassment zone for otariid pinnipeds is 53 m. WSDOT would be required to implement a 60 m shutdown zone for otariids for all pile driving activities. At that close range, WSDOT will be able to detect Steller sea lions and implement the required shutdown measures before Steller sea lions can enter the Level A harassment zone. Therefore, no takes of Steller sea lions by Level A harassment are requested or authorized.

## Harbor Seal

To estimate the number of harbor seals that may be taken by Level B harassment from the two projects, WSDOT calculated the area encompassed above the Level B

harassment threshold for each pile size, type, and method for both projects. WSDOT then multiplied the estimated density of harbor seals in the area (3.91 per km<sup>2</sup>; Navy, 2019) by the ensonified area and the expected days of work for each project element (Table 10). In total, WSDOT estimates that 3,450 harbor seals may be taken by Level B harassment.

**Table 10 -- Estimated Take of Harbor Seals by Level B Harassment**

Pile size, type, and method	Bainbridge ensonified area (km <sup>2</sup> )	Bainbridge days of work	Eagle Harbor ensonified area (km <sup>2</sup> )	Eagle Harbor days of work	Bainbridge takes by pile size, type, and method	Eagle Harbor takes by pile size, type, and method
12-in timber vibratory	1.5	5	1.6	13	30	81
18-in steel vibratory	N/A	0	24.1	3	0	188
24-in steel vibratory	24.0	2	24.1	3	188	283
30-in steel vibratory	24.0	23	24.1	4	2,158	377
36-in steel vibratory	24.0	6	24.1	4	563	377
24-in steel impact	2.0	13	1.66	3	102	20
30-in steel impact	1.3	2	N/A	0	10	0
36-in steel impact	2.0	6	1.66	1	47	7
Total					2,117	1,333

The areas ensonified above the Level A harassment threshold for phocid pinnipeds has been omitted from the areas ensonified above the Level B harassment threshold presented in Table 10. For impact installation of 30-in steel piles, the Level A harassment zone for phocid pinnipeds is approximately 728 m. To estimate the number of harbor seals that may be present within the Level A harassment zone, WSDOT used the average sightings rate from the Seattle Multimodal Project at Colman Dock (5.21 harbor seals per day; Table 8) multiplied by the days of impact pile driving expected for each project (27 days for the Bainbridge Project and 8 days for the Eagle Harbor Project) to estimate that 141 and 42 harbor seals may be taken by Level A harassment from the Bainbridge Project and Eagle Harbor Project, respectively. Therefore, WSDOT requested, and NMFS has authorized, a total of 183 takes of harbor seals by Level A harassment.

## Northern Elephant Seal

Individual elephant seals have occasionally been reported in central Puget Sound (e.g., Orca Network, 2020), but are considered rare in the project areas. WSDOT estimated that up to 10 Level B harassment takes of northern elephant seals could result from each project, for a total of 20 northern elephant seal takes by Level B harassment. The largest Level A harassment zone (728 m) occurs during impact installation of 30-in steel pipe piles (Table 7). It is unlikely that northern elephant seals would be found within this zone, and even more unlikely that northern elephant seals would be found within the Level A harassment zones for vibratory pile driving (up to 295 m). However, even if northern elephant seals were encountered in the project areas, at that close range, WSDOT will be able to detect them and implement the required shutdown measures before any northern elephant seals can enter the Level A harassment zones. Therefore, no take of northern elephant seals by Level A harassment is requested or authorized.

**Table 11 -- Authorized Take of Marine Mammals by Level A and Level B Harassment from the Bainbridge Project by Species and Stock**

Species	Stock	Authorized Take by Level B Harassment	Authorized Take by Level A Harassment
Gray whale	Eastern North Pacific	20	0
Minke whale	California/Oregon/Washington	20	0
Killer whale	West Coast Transient	60	0
Bottlenose dolphin	California Coastal	20	0
Long-beaked common dolphin	California	20	0
Pacific white-sided dolphin		20	0
Harbor porpoise	Washington Inland Waters	298	19
Dall's porpoise	California/Oregon/Washington	20	5
California sea lion	U.S.	402	0
Steller sea lion	Eastern	180	0
Northern elephant seal	California Breeding	10	0
Harbor seal	Washington Northern Inland Waters	2,117	141

**Table 12 -- Authorized Take of Marine Mammals by Level A and Level B Harassment from the Eagle Harbor Project by Species and Stock**

Species	Stock	Authorized Take by	Authorized Take by
---------	-------	--------------------	--------------------

		Level B Harassment	Level A Harassment
Gray whale	Eastern North Pacific	20	0
Minke whale	California/Oregon/Washington	20	0
Killer whale	West Coast Transient	60	0
Bottlenose dolphin	California Coastal	20	0
Long-beaked common dolphin	California	20	0
Pacific white-sided dolphin		20	0
Harbor porpoise	Washington Inland Waters	183	6
Dall's porpoise	California/Oregon/Washington	20	5
California sea lion	U.S.	219	0
Steller sea lion	Eastern	180	0
Northern elephant seal	California Breeding	10	0
Harbor seal	Washington Northern Inland Waters	1,333	42

**Table 13 -- Total Authorized Take of Marine Mammals by Level A and Level B Harassment, by Species and Stock and Percent of Take by Stock**

Species	Stock	Total Authorized Take by Level A Harassment	Total Authorized Take by Level B Harassment	Total Authorized Take	Percent of Stock
Gray whale	Eastern North Pacific	0	40	40	0.2
Minke whale	California/Oregon/Washington	0	40	40	11.0
Killer whale	West Coast Transient	0	120	120	34.4
Bottlenose dolphin	California Coastal	0	40	40	8.8
Long-beaked common dolphin	California	0	40	40	3.2
Pacific white- sided dolphin	California/Oregon/Washington	0	40	40	0.2
Harbor porpoise	Washington Inland Waters	25	481	506	5.0
Dall's porpoise	California/Oregon/Washington	10	40	50	0.3
California sea lion	U.S.	0	621	621	0.24
Steller sea lion	Eastern	0	360	360	0.83
Northern elephant seal	California Breeding	0	20	20	0.01
Harbor seal	Washington Northern Inland Waters	183	3,450	3,633	32.9

## **Mitigation**

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, NMFS considers two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned); and

(2) The practicability of the measures for applicant implementation, which may consider such things as cost and impact on operations.

### *Shutdown Zones*

Before the commencement of in-water construction activities, WSDOT must establish shutdown zones for all activities. The purpose of a shutdown zone is generally

to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Pile driving would also not commence until all marine mammals are clear of their respective shutdown zones. Shutdown zones are established in consideration of the Level A harassment zones and therefore typically vary based on the activity type and marine mammal hearing group. However, rather than establishing different shutdown zones for each hearing group for each project element, WSDOT proposed, and NMFS has included in the authorization, simplified shutdown zones and only one or two shutdown zones for each hearing group to implement across all project elements (Table 14). For example, the 720 m shutdown zone for low-frequency and high-frequency cetaceans for all vibratory pile driving activities encompasses both the largest Level A harassment zone for high-frequency cetaceans (717.2 m; see Table 7) and the largest Level A harassment zone for low-frequency cetaceans (485.1 m; see Table 7). This conservatively protects animals in both hearing groups, simplifies analysis and monitoring, and presents minimal risks to implementing the project, as marine mammals in these hearing groups are unlikely to be present within 720 m of the construction site during pile driving activities. For impact pile driving, WSDOT must retain the 720 m shutdown zone for high-frequency cetaceans but increase the shutdown zone for low-frequency cetaceans to 2,175 m which encompasses the largest Level B harassment zone for impact pile driving, and is also the required shutdown zone for preventing take of unauthorized species (*e.g.*, Southern Resident killer whales, humpback whales) (Table 14). The Level A harassment zones for high-frequency cetaceans from impact pile driving are all greater than 720 m (Table 7), thus any high-frequency cetacean that enters the Level A harassment zone beyond 720 m must be recorded as taken by Level A harassment.

At minimum, the shutdown zone for all hearing groups and all activities is 10 m. For in-water heavy machinery work other than pile driving (*e.g.*, standard barges, *etc.*), if

a marine mammal comes within 10 m, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions. This type of work could include, for example, the movement of the barge to the pile location or positioning of the pile on the substrate via a crane.

WSDOT must also establish shutdown zones for all marine mammals for which take has not been authorized or for which incidental take has been authorized but the authorized number of takes has been met. These zones are equivalent to the Level B harassment zones for each activity (see Table 14).

WSDOT must also implement shutdown measures for Southern Resident killer whales and humpback whales. If Southern Resident killer whales or humpback whales are sighted within the vicinity of the project areas and are approaching the Level B harassment zone (see Table 14), WSDOT must shut down the pile driving equipment to avoid possible take of these species. If a killer whale approaches the Level B harassment zone during pile driving, and it is unknown whether it is a Southern Resident killer whale or a transient killer whale, it must be assumed to be a Southern Resident killer whale and WSDOT would implement the shutdown measure.

If a Southern Resident killer whale, unidentified killer whale, or humpback whale enters the Level B harassment zone undetected, in-water pile driving must be suspended until the whale exits the Level B harassment zone, or 15 minutes have elapsed with no sighting of the animal, to avoid further Level B harassment.

**Table 14 -- Shutdown Zones for the Bainbridge and Eagle Harbor Projects**

Pile type and method	Shutdown zone (m)					
	LF cetacean	MF cetacean	HF cetacean	Phocids	Otariids	Southern Resident killer whales, humpback whales, and other unauthorized species
12-in timber vibratory	720	60	720	60	60	2,175

18-in steel vibratory	720	60	720	60	60	13,345 <sup>a</sup>
24-in steel vibratory	720	60	720	60	60	13,345 <sup>a</sup>
30-in steel vibratory	720	60	720	60	60	13,345 <sup>a</sup>
36-in steel vibratory	720	60	720	60	60	13,345 <sup>a</sup>
24-in steel impact	2,175	60	720	60	60	2,175
30-in steel impact	2,175	60	720	60	60	2,175
36-in steel impact	2,175	60	720	60	60	2,175

<sup>a</sup> 13,345 m is the maximum distance sound can travel before reaching land.

### *Protected Species Observers*

The placement of protected species observers (PSOs) during all pile driving activities (described in the **Monitoring and Reporting** section) must ensure that the entire shutdown zone is visible. Should environmental conditions deteriorate such that the entire shutdown zone would not be visible (*e.g.*, fog, heavy rain), pile driving must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.

### Monitoring for Level A and Level B Harassment

PSOs must monitor the Level B harassment zones to the extent practicable, and all of the Level A harassment zones. Monitoring zones provide utility for observing by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project areas outside the shutdown zones and thus prepare for a potential cessation of activity should the animal enter the shutdown zone.

### Pre-Activity Monitoring

Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs must observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone is considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. If a marine mammal is observed within the shutdown zones listed in Table 14, pile



driving activity must be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity must not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zones or 15 minutes have passed without re-detection of the animal. When a marine mammal for which Level B harassment take is authorized is present in the Level B harassment zone, activities may begin and Level B harassment take must be recorded. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones would commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.*, the entire shutdown zone and surrounding waters must be visible to the naked eye).

#### Coordination with Local Marine Mammal Research Network

Prior to the start of pile driving for the day, the PSOs must contact the Orca Network to find out the location of the nearest marine mammal sightings. The Local Marine Mammal Research Network consists of a list of over 600 (and growing) residents, scientists, and government agency personnel in the United States and Canada. Sightings are called or emailed into the Orca Network and immediately distributed to other sighting networks including: the NMFS Northwest Fisheries Science Center, the Center for Whale Research, Cascadia Research, the Whale Museum Hotline, and the British Columbia Sightings Network.

Sightings information collected by the Orca Network includes detection by hydrophone. The SeaSound Remote Sensing Network is a system of interconnected hydrophones installed in the marine environment of Haro Strait (west side of San Juan Island) to study orca communication, in-water noise, bottom fish ecology, and local climatic conditions. A hydrophone at the Port Townsend Marine Science Center measures average in-water sound levels and automatically detects unusual sounds. These passive acoustic devices allow researchers to hear when different marine mammals come

into the region. This acoustic network, combined with the volunteer visual sighting network allows researchers to document presence and location of various marine mammal species.

#### *Soft Start*

Soft-start procedures are used to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors are required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. Soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

#### *Bubble Curtain*

A bubble curtain must be employed during impact installation or proofing of steel piles, unless the piles are driven in the dry, or water is less than 3 ft (0.9 m) in depth. A noise attenuation device is not required during vibratory pile driving. If a bubble curtain or similar measure is used, it must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column. Any other attenuation measure must provide 100 percent coverage in the water column for the full depth of the pile. The lowest bubble ring must be in contact with the mudline for the full circumference of the ring. The weights attached to the bottom ring must ensure 100 percent mudline contact. No parts of the ring or other objects may prevent full mudline contact.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered by NMFS, NMFS has determined that the mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

## Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present while conducting the activities. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the activity; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;

- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

### *Visual Monitoring*

Marine mammal monitoring during pile driving activities must be conducted by PSOs meeting NMFS' standards and in a manner consistent with the following:

- Independent PSOs (*i.e.*, not construction personnel) who have no other assigned tasks during monitoring periods must be used;
- At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience; and
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience working as a marine mammal observer during construction.

PSOs must have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including, but not limited to, the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for

implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and

- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

During impact driving of all steel piles, and during vibratory removal of timber piles, WSDOT must have three PSOs stationed to monitor the project area: one at the construction site, one across Eagle Harbor looking toward the construction site, and one on board the Seattle-Bainbridge ferry. For vibratory driving of all steel piles, WSDOT must have five PSOs to monitor the project area: three at the locations described for impact pile driving, with one additional PSO stationed on the Seattle waterfront and one stationed on Alki Beach looking west toward Bainbridge Island.

Monitoring must be conducted 30 minutes before, during, and 30 minutes after all in water construction activities. In addition, observers must record all incidents of marine mammal occurrence, regardless of distance from activity, and must document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

### *Reporting*

A draft marine mammal monitoring report must be submitted to NMFS within 90 days after the completion of pile driving activities, or 60 days prior to a requested date of issuance of any future IHAs for the project, or other projects at the same location, whichever comes first. The marine mammal report must include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including: (a) How many and what type of piles were driven or removed and the method (*i.e.*, impact or vibratory); and (b) the total duration of time for each pile (vibratory driving) number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring; and
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance.

For each observation of a marine mammal, the following must be reported:

- Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting;
- Time of sighting;
- Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
- Distance and location of each observed marine mammal relative to the pile being driven or hole being drilled for each sighting;
- Estimated number of animals (min/max/best estimate);
- Estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*);
- Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or

changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);

- Number of marine mammals detected within the harassment zones, by species; and
- Detailed information about implementation of any mitigation (e.g., shutdowns and delays), a description of specified actions that ensued, and resulting changes in behavior of the animal(s), if any.

If no comments are received from NMFS within 30 days, the draft report will constitute the final report. If comments are received, a final report addressing NMFS' comments must be submitted within 30 days after receipt of comments. All PSO datasheets and/or raw sighting data must be submitted with the draft marine mammal report.

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, WSDOT must report the incident to the Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov*), NMFS and to the West Coast Region (WCR) regional stranding coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, WSDOT must immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHAs. WSDOT must not resume their activities until notified by NMFS.

The report must include the following information:

1. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
2. Species identification (if known) or description of the animal(s) involved;
3. Condition of the animal(s) (including carcass condition if the animal is dead);

4. Observed behaviors of the animal(s), if alive;
5. If available, photographs or video footage of the animal(s); and
6. General circumstances under which the animal was discovered.

### **Negligible Impact Analysis and Determination**

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.*, intensity, duration), the context of any impacts or responses (*e.g.*, critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS’ implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

Pile driving activities from the Bainbridge and Eagle Harbor Projects have the potential to disturb or displace marine mammals. Specifically, the project activities may result in take, in the form of Level A and Level B harassment, from underwater sounds



generated from pile driving. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway.

The authorized takes from Level A and Level B harassment would be due to potential behavioral disturbance, TTS, and PTS. No serious injury or mortality is anticipated or authorized given the nature of the activities and measures designed to minimize the possibility of injury to marine mammals. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see **Mitigation** section).

To avoid repetition, the majority of our analysis applies to all the species listed in Table 3, given that the anticipated effects of these projects on different marine mammal stocks are expected to be relatively similar in nature. Where there are special circumstances for a species or stock (*e.g.*, gray whales), they are included as a separate subsection below.

NMFS has identified key factors which may be employed to assess the level of analysis necessary to conclude whether potential impacts associated with a specified activity should be considered negligible. These include (but are not limited to) the type and magnitude of taking, the amount and importance of the available habitat for the species or stock that is affected, the duration of the anticipated effect to the species or stock, and the status of the species or stock. The following factors support negligible impact determinations for all affected stocks.

Take by Level A harassment is authorized for three species (harbor seals, harbor porpoise, and Dall's porpoise) to account for the possibility that an animal could enter a Level A harassment zone prior to detection, and remain within that zone for a duration long enough to incur PTS. Any take by Level A harassment is expected to arise from, at most, a small degree of PTS, *i.e.*, minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by impact pile driving

(*i.e.* the low-frequency region below 2 kilohertz (kHz)), not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would need to be exposed to higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of PTS. Two of the three species for which Level A harassment is authorized are high-frequency cetaceans (harbor porpoise and Dall's porpoise), and the hearing ability of the third species for which Level A harassment is authorized (harbor seal) below 2 kHz is also poor (NMFS, 2018). Given the hearing ranges of these three species, PTS incurred at the low frequencies of pile driving noise would not interfere either with conspecific communication or echolocation, and therefore would not be expected to impact the survival or reproductive abilities of the affected individuals, let alone the stock or population.

As described above, NMFS expects that marine mammals would likely move away from an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start. WSDOT is also required to shut down pile driving activities if marine mammals approach within hearing group-specific zones (see Table 14), further minimizing the likelihood and degree of PTS that would be incurred. Even absent mitigation, no serious injury or mortality from construction activities is anticipated or authorized.

Effects on individuals that are taken by Level B harassment in the form of behavioral disruption, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as avoidance, increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff, 2006). Most likely, individuals would simply move away from the sound source and temporarily avoid the area where pile driving is occurring. If sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activities are occurring, particularly as the

project is located in a busy harbor with high amounts of vessel traffic, including large ferry boats. We expect that any avoidance of the project areas by marine mammals would be temporary in nature and that any marine mammals that avoid the project areas during construction would not be permanently displaced. Short-term avoidance of the project areas and energetic impacts of interrupted foraging or other important behaviors is unlikely to affect the reproduction or survival of individual marine mammals, and the effects of behavioral disturbance on individuals is not likely to accrue in a manner that would affect the rates of recruitment or survival of any affected stock.

Additionally, and as noted previously, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. However, since the hearing sensitivity of individuals that incur TTS is expected to recover completely within minutes to hours, it is unlikely that the brief hearing impairment would affect the individual's long-term ability to forage and communicate with conspecifics, and would therefore not likely impact reproduction or survival of any individual marine mammal, let alone adversely affect rates of recruitment or survival of the species or stock.

The projects are also not expected to have significant adverse effects on affected marine mammals' habitats. The project activities will not modify existing marine mammal habitat for a significant amount of time. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected (with no known particular importance to marine mammals), the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences. Aside from the biologically important area (BIA) for gray whales described below, there are no known

areas of importance for other marine mammals, such as feeding or pupping areas, in the project area.

For all species and stocks, take would occur within a limited, relatively confined area (Eagle Harbor within central Puget Sound) of the stocks' ranges. Given the availability of suitable habitat nearby, any displacement of marine mammals from the project areas is not expected to affect marine mammals' fitness, survival, and reproduction due to the limited geographic area that will be affected in comparison to the much larger habitat for marine mammals in Puget Sound. Level A harassment and Level B harassment will be reduced to the level of least practicable adverse impact to the marine mammal species or stocks and their habitat through use of mitigation measures described herein. Some individual marine mammals in the project areas may be present and be subject to repeated exposure to sound from pile driving on multiple days. However, these individuals would likely return to normal behavior during gaps in pile driving activity. Eagle Harbor is a busy harbor and monitoring reports from previous in-water pile driving activities along the nearby Seattle waterfront (*e.g.*, WSDOT, 2022) indicate that marine mammals continue to remain in the greater project area throughout pile driving activities. Therefore, any behavioral effects of repeated or long duration exposures are not expected to negatively affect survival or reproductive success of any individuals. Thus, even repeated Level B harassment of some small subset of an overall stock is unlikely to result in any effects on rates of reproduction and survival of the stock.

#### *Gray Whales*

Puget Sound is part of a BIA for migrating gray whales (Calambokidis *et al.*, 2015). While Eagle Harbor is included in the BIA, gray whales typically remain further north in Puget Sound, primarily in the waters around Whidbey Island (Calambokidis *et al.*, 2018). Gray whales are rarely observed in central Puget Sound, and have never been documented inside Eagle Harbor. Therefore, even though the project areas overlap with

the BIA, the infrequent occurrence of gray whales suggests that the projects would have minimal, if any, impact on the migration of gray whales in the BIA, and would therefore not affect reproduction or survival.

There is an ongoing UME for gray whales (see the Description of Marine Mammals in the Area of Specified Activities section of the **Federal Register** notice of proposed IHA (87 FR 48623; August 10, 2022)). However, we do not expect the authorized takes to exacerbate or compound upon this ongoing UME. As noted previously, no Level A harassment, serious injury, or mortality of gray whales is expected or authorized, and any Level B harassment takes of gray whales would most likely be in the form of behavioral disturbance. Preliminary findings from necropsied gray whales that are considered part of the ongoing UME have shown evidence of emaciation, suggesting that impacts to feeding would be of most concern. However, the project areas have not been identified as important for feeding of gray whales. Additionally, the project areas are not considered important for breeding gray whales. Therefore the projects are unlikely to disrupt any critical behaviors (*e.g.*, feeding, mating) or have any effect on the reproduction or survival of gray whales, even in light of the ongoing UME.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from these activities are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No mortality or serious injury is anticipated or authorized for either project;
- Level A harassment is not anticipated or authorized for 9 of the 12 species. For the other three species, Level A harassment would be in the form of a slight degree of PTS;

- Level B harassment would be in the form of behavioral disturbance, primarily resulting in avoidance of the project areas around where impact or vibratory pile driving is occurring, and some low-level TTS that may limit the detection of acoustic cues for relatively brief amounts of time in relatively confined footprint of the activities;
- Nearby areas of similar habitat value within Puget Sound are available for marine mammals that may temporarily vacate the project areas during construction activities for both projects;
- Effects on species that serve as prey for marine mammals from the activities are expected to be short-term and, therefore, any associated impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue to adverse impacts on their populations from either project;
- The number of authorized takes by Level B harassment is relatively low for all stocks for both projects;
- The ensonified areas from both projects are very small relative to the overall habitat ranges of all species and stocks, and will not adversely affect ESA-designated critical habitat, or cause more than minor impacts in any BIAS or any other areas of known biological importance;
- The lack of anticipated significant or long-term negative effects to marine mammal habitat from either project;
- The efficacy of the mitigation measures in reducing the effects of the specified activities on all species and stocks for both projects; and
- Monitoring reports from similar work in Puget Sound that have documented little to no effect on individuals of the same species that could be impacted by the specified activities from both projects.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the

implementation of the proposed monitoring and mitigation measures, NMFS finds that the total marine mammal take from the planned activity will have a negligible impact on all affected marine mammal species or stocks.

### **Small Numbers**

As noted previously, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

For all species and stocks other than killer whales from the West Coast Transient stock, the authorized take is below one-third of the stock abundance. The authorized take of transient killer whales, as a proportion of the stock abundance is 34.4 percent, if all takes are assumed to occur for unique individuals. In reality, it is unlikely that all takes would occur to different individuals. The project area represents a small portion of the stock's overall range (from Alaska to California (Muto *et al.*, 2019)) and based on sightings reports from the Orca Network, it is reasonable to expect that the same individual transient killer whales would be present within the project area on multiple days during the proposed activities. Therefore, it is more likely that there will be multiple takes of a smaller number of individuals within the project area, such that the number of individuals taken would be less than one-third of the population.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals would be taken relative to the population size of the affected species or stocks.

### **Unmitigable Adverse Impact Analysis and Determination**

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

### **Endangered Species Act**

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is authorized or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

### **National Environmental Policy Act**

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our action (*i.e.*, the issuance of an IHA) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion



Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

**Authorization**

As a result of these determinations, NMFS has issued an IHA to WSDOT for the potential harassment of small numbers of 12 marine mammal species incidental to the Bainbridge Island Ferry Terminal Overhead Loading Replacement Project and Eagle Harbor Maintenance Facility Slip F Improvement Project in Bainbridge Island, Washington, that includes the previously explained mitigation, monitoring, and reporting requirements.

Dated: September 20, 2022.

**Kimberly Damon-Randall,**

*Director, Office of Protected Resources,*

*National Marine Fisheries Service.*

[FR Doc. 2022-20701 Filed: 9/23/2022 8:45 am; Publication Date: 9/26/2022]